

Amendments to the Claims:

1. (Currently amended) A therapeutic medical device for ablating cardiac tissue, comprising:

an energy delivering catheter having a flexible elongate member adapted for intraluminal positioning and a balloon member at a distal end of the elongate member,

the balloon member adapted to contact cardiac tissue upon inflation within a ~~body lumen~~ heart and further adapted, upon inflation, to expand to a size larger than a mouth of a pulmonary vein and define a clear pathway for transmission of ablative energy to form a lesion at least partially around the vein, and

further including a position-sensing system comprising:

an illuminator disposed within the balloon member which projects light through the balloon member toward ~~an interluminal tissue surface~~ a target surface of the heart where ablation is desired, and

a collecting device also disposed within the balloon member ~~which receives and adapted to receive~~ reflected light ~~that returns to the balloon member~~ when the balloon member is properly positioned to provide a clear pathway to the target surface of the heart for ablative energy.

2. (Original) The therapeutic medical device of claim 1, wherein the illuminator projects laser radiation.

3. (Original) The therapeutic medical device of claim 1, wherein the illuminator projects green light.

4. (Original) The therapeutic medical device of claim 1, wherein the illuminator projects both green and red light.

5. (Original) The therapeutic medical device of claim 1, wherein the illuminator projects white light.

6. (Original) The therapeutic medical device of claim 1, wherein the illuminator comprises an optical fiber.
7. (Original) The therapeutic medical device of claim 6, wherein the optical fiber is also a conduit for therapeutic radiation.
8. (Original) The therapeutic medical device of claim 7, wherein the optical fiber is in communication with a laser source, an arc lamp, an LED, or a tungsten filament bulb.
9. (Original) The therapeutic medical device of claim 1, wherein the illuminator and collecting device are the same, such that projected energy and reflected energy can be processed by the same device.
10. (Original) The therapeutic medical device of claim 1, wherein the illuminator projects synchronous light and therapeutic energy.
11. (Original) The therapeutic medical device of claim 10, wherein the illuminator and collecting device are the same, such that projected energy and reflected energy can be processed by the same device.
12. (Original) The therapeutic medical device of claim 1, wherein the detector is a spectrometer.
13. (Original) The therapeutic medical device of claim 12, wherein the spectrometer is in communication with a computer that indicates changes in intensity of the reflected energy as the sensor is contacted with the tissue surface.
14. (Original) The therapeutic medical device of claim 13, wherein the computer analyzes the intensity of reflected green light.

15. (Original) The therapeutic medical device of claim 13, wherein the computer analyzes a ratio of reflected green light and reflected red light.

16. (Currently amended) The therapeutic medical device of claim 1, further comprising a reflective sheath that is located about a portion of an outer surface of the balloon member ~~attached to the distal end of the catheter and covers approximately a third to a distal most portion of the balloon member where a point of contact with tissue occurs.~~

17. (Original) The therapeutic medical device of claim 16, wherein the sheath comprises a polyethylene terephthalate polymer, which contains light scattering particles.